CLAIMS

A condensed polycyclic compound represented
 by general formula [I]:

$$Ar_1$$
 R_1
 Ar_2
 Ar_3
 Ar_4

wherein R_1 is hydrogen, halogen, cyano, a substituted amino or a group selected from the group consisting of alkyl, aralkyl, aryl, heterocyclic, each having no substituent or a substituent; and Ar_1 to Ar_5 are the same or different and are each independently a condensed polycyclic aromatic group or a condensed polycyclic heterocyclic group, each having no substituent or a substituent.

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2. The condensed polycyclic compound according to claim 1, wherein at least one of Ar_1 to Ar_5 is a condensed polycyclic aromatic group represented by general formula [III]:

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$$R_3$$
 R_4 [III]

wherein R2 is hydrogen, halogen, cyano, a substituted

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amino or a group selected from the group consisting of alkyl, aralkyl, aryl and heterocyclic, each having no substituent or a substituent; and R₃ and R₄ are the same or different and are each independently hydrogen or a group selected from the group consisting of alkyl, aralkyl, aryl and heterocyclic, each having no substituent or a substituent.

The condensed polycyclic compound according
 to claim 2 represented by the following structural formula.

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4. The condensed polycyclic compound according to claim 1, wherein at least one of Ar₁ to Ar₅ is a condensed polycyclic aromatic group represented by any of general formulas [IV] to [VII]:

$$R_5$$

$$R_6$$
 [V]

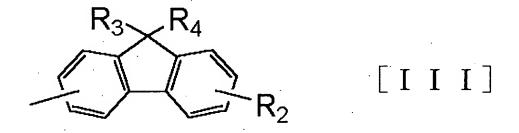
wherein R_5 to R_8 are hydrogen, halogen, cyano, a substituted amino or a group selected from the group consisting of alkyl, aralkyl, aryl and heterocyclic, each having no substituent or a substituent.

5. A condensed polycyclic compound represented by general formula [II]:

$$Ar_{6}$$
 Ar_{11}
 Ar_{7}
 Ar_{10}
 Ar_{8}
 Ar_{9}

wherein Ar_6 to Ar_{11} are the same or different and are each independently a group selected from the group consisting of condensed polycyclic aromatic groups and condensed polycyclic heterocyclic groups, each having no substituent or a substituent.

6. The condensed polycyclic compound according to claim 5, wherein at least one of Ar₆ to Ar₁₁ is a condensed polycyclic aromatic group represented by general formula [III]:



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wherein R_2 is hydrogen, halogen, cyano, a substituted amino or a group selected from the group consisting of alkyl, aralkyl, aryl and heterocyclic, each having

no substituent or a substituent; and R_3 and R_4 are the same or different and are each independently hydrogen or a group selected from the group consisting of alkyl, aralkyl, aryl and heterocyclic, each having no substituent or a substituent.

7. The condensed polycyclic compound according to claim 6 represented by the following structural formula.

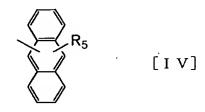
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$$H_3C$$
 CH_3
 H_3C
 CH_3
 H_3C
 CH_3
 CH_3

8. The condensed polycyclic compound according to claim 5, wherein at least one of Ar_1 to Ar_5 is a condensed polycyclic aromatic group represented by any of general formulas [IV] to [VII]:



$$R_6$$
 [V]

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wherein R_5 to R_8 are hydrogen, halogen, cyano, a substituted amino or a group selected from the group consisting of alkyl, aralkyl, aryl and heterocyclic, each having no substituent or a substituent.

9. An organic light-emitting device comprising a pair of electrodes consisting of an anode and a cathode and one or a plurality of organic compound-containing layers sandwiched between the pair of

electrodes, wherein at least one layer of the organic compound-containing layers contains at least one compound selected from the group consisting of the condensed polycyclic compounds according to claim 1.

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10. An organic light-emitting device comprising a pair of electrodes consisting of an anode and a cathode and one or a plurality of organic compound-containing layers sandwiched between the pair of electrodes, wherein at least one layer of the organic compound-containing layers contains at least one compound selected from the group consisting of the condensed polycyclic compounds according to claim 5.

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11. The organic light-emitting device according to claim 9, wherein at least one layer of the organic compound-containing layers containing the condensed polycyclic compounds is an electron-transporting layer or a light-emitting layer.

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12. The organic light-emitting device according to claim 10, wherein at least one layer of the organic compound-containing layers containing the condensed polycyclic compounds is an electron-transporting layer or a light-emitting layer.

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13. The organic light-emitting device according

to claim 9, wherein at least one of the layers containing the condensed polycyclic compounds is a light-emitting layer containing a fluorene compound represented by general formula [VIII]:

$$\begin{array}{c|c}
Ar_{12} \\
Ar_{13}
\end{array}$$

$$\begin{array}{c}
R_{9} \\
R_{10}
\end{array}$$

$$\begin{array}{c}
Ar_{14} \\
Ar_{15}
\end{array}$$

$$\begin{bmatrix}
V \ I \ I \ I
\end{bmatrix}$$

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wherein R_9 and R_{10} are the same or different and are each independently hydrogen or a group selected from the group consisting of alkyl, aralkyl, aryl and heterocyclic, each having no substituent or a substituent; any pair of R, combined to their respective fluorene structures are the same or different to each other; any pair of R10 combined to their respective fluorene structures are the same or different to each other; R_{11} and R_{12} are the same or different and are each independently hydrogen, halogen, cyano or a group selected from the group consisting of alkyl, aralkyl, aryl and heterocyclic, each having no substituent or a substituent; any pair of R₁₁ combined to their respective fluorene structures are the same or different to each other; any pair of R₁₂ combined to their respective fluorene structures are the same or different to each other;

 Ar_{12} , Ar_{13} , Ar_{14} and Ar_{15} are the same or different and are each independently a group selected from the group consisting of aromatic, heterocyclic, condensed polycyclic aromatic and condensed polycyclic heterocyclic, each having no substituent or a substituent, and Ar_{12} and Ar_{14} can be bonded to Ar_{13} and Ar_{15} respectively to form a ring; and n is an integer from 1 to 10.

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14. The organic light-emitting device according to claim 10, wherein at least one of the layers containing the condensed polycyclic compounds is a light-emitting layer containing a fluorene compound represented by general formula [VIII]:

 $\begin{array}{c|c}
Ar_{12} & R_9 & R_{10} \\
Ar_{13} & Ar_{15}
\end{array}$ $\begin{bmatrix}
V I I I
\end{bmatrix}$

wherein R_9 and R_{10} are the same or different and are each independently hydrogen, halogen, cyano or a group selected from the group consisting of alkyl, aralkyl, aryl and heterocyclic, each having no substituent or a substituent; any pair of R_9 combined to their respective fluorene structures are the same

or different to each other; any pair of R₁₀ combined

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to their respective fluorene structures are the same or different to each other; R_{11} and R_{12} are the same or diffenrent and are each independently hydrogen, halogen, cyano or a group selected from the group consisting of alkyl, aralkyl, aryl and heterocyclic, each having no substituent or a substituent; any pair of R₁₁ combined to their respective fluorene structures are the same or different to each other; any pair of R_{12} combined to their respective fluorene structures are the same or different to each other; Ar_{12} , Ar_{13} , Ar_{14} and Ar_{15} are the same or different and are each independently a group selected from the group consisting of aromatic, heterocyclic, condensed polycyclic aromatic and condensed polycyclic heterocyclic, each having no substituent or a substituent, and Ar₁₂ and Ar₁₄ can be bonded to Ar₁₃ and Ar₁₅ respectively to form a ring; and n is an integer from 1 to 10.

15. The organic light-emitting device according to claim 9, wherein at least one of the layers containing the condensed polycyclic compounds is a light-emitting layer containing a fluorene compound represented by general formula [IX]:

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$$Ar_{18}$$
 Ar_{19}
 Ar_{16}
 R_{13}
 R_{14}
 Ar_{17}
 Ar_{20}
 Ar_{21}
 R_{15}
 R_{16}
 R_{16}

wherein R_{13} and R_{14} are the same or different and are each independently hydrogen or a group selected from 5 the group consisting of alkyl, aralkyl, aryl and heterocyclic, each having no substituent or a substituent; any pair of R₁₃ combined to their respective fluorene structures are the same or different to each other; any pair of R14 combined to 10 their respective fluorene structures are the same or different to each other; R₁₅ and R₁₆ are the same or different and are each independently hydrogen, halogen, cyano or a group selected from the group consisting of alkyl, aralkyl, aryl and heterocyclic, 15 each having no substituent or a substituent; any pair of R₁₅ combined to their respective fluorene structures are the same or different to each other; any pair of R₁₆ combined to their respective fluorene structures are the same or different to each other; 20 Ar_{16} and Ar_{17} are the same or different and are each independently a divalent group selected from the group consisting of divalent aromatic and divalent

heterocyclic, each having no substituent or a substituent; Ar_{18} , Ar_{19} , Ar_{20} and Ar_{21} are the same or different and are each independently a group selected from the group consisting of aromatic, heterocyclic, condensed polycyclic aromatic and condensed polycyclic heterocyclic, each having no substituent or a substituent, and Ar_{18} and Ar_{20} can be bonded to Ar_{19} and Ar_{21} respectively to form a ring; and m is an integer from 1 to 10.

16. The organic light-emitting device according to claim 10, wherein at least one of the layers containing the condensed polycyclic compounds is a light-emitting layer containing a fluorene compound represented by general formula [IX]:

$$Ar_{19}$$
 $N-Ar_{16}$
 R_{13}
 R_{14}
 $Ar_{17}-N$
 Ar_{20}
 R_{15}
 R_{16}
 R_{16}
 $R_{17}-N$
 Ar_{20}
 R_{18}
 R_{19}
 R_{19}

wherein R_{13} and R_{14} are the same or different and are each independently hydrogen or a group selected from the group consisting of alkyl, aralkyl, aryl and heterocyclic, each having no substituent or a substituent; any pair of R_{13} combined to their

respective fluorene structures are the same or different to each other; any pair of R14 combined to their respective fluorene structures are the same or different to each other; R_{15} and R_{16} are the same or 5 different and are each independently hydrogen, halogen, cyano or a group selected from the group consisting of alkyl, aralkyl, aryl and heterocyclic, each having no substituent or a substituent; any pair of R_{15} combined to their respective fluorene structures are the same or different to each other; 10 any pair of R₁₆ combined to their respective fluorene structures are the same or different to each other; Ar_{16} and Ar_{17} are the same or different and are each independently a divalent group selected from the 15. group consisting of divalent aromatic and divalent heterocyclic, each having no substituent or a substituent; Ar_{18} , Ar_{19} , Ar_{20} and Ar_{21} are the same or different and are each independently a group selected from the group consisting of aromatic, heterocyclic, 20 condensed polycyclic aromatic and condensed polycyclic heterocyclic, each having no substituent or a substituent, and Ar_{18} and Ar_{20} can be bonded to Ar_{19} and Ar_{21} respectively to form a ring; and m is an integer from 1 to 10.